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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,891	10/23/2003	Yucong Wang	GP-303433	9021

7590 09/07/2006

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EXAMINER
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CHARLES, MARCUS

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/691,891

### Applicant(s)

WANG ET AL.

### Examiner

Marcus Charles

### Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10-23-2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This the first action relating to serial application number 10/691,891 filed 10-23-2003.

Claims 1-11 are currently pending.

### ***Drawings***

1. The drawing filed with this application is accepted by the examiner.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba et al. (6,254,503) in view of Matsuyama (6,106,689). Chiba et al. discloses a pulley for a CVT comprising first and second pulley halves (2/4) having truncated movable portions symmetrically opposite to each other and are movable relative to each other on a rotational axis. Each pulley half has a sloping surface (3/5) with a circumferential maximum height roughness average Ry of 0.6-2.5 micrometer and the average roughness of 0.1 to 0.5. Chiba et al. fail to disclose the average roughness Ra, y) measured in a direction (y) circumferential to the x-axis. Matsuyama discloses a surface roughness (Ra, y) to be 20 nm to 600nm, which is approximated 0.02 to 0.6 micrometer in order to avoid large and uneven irregularities. Therefore, it would have been obvious to one of ordinary skill in the art to modify the roughness Chiba et al. so

that the average roughness of  $(Ra, y)$  of the maximum height  $(Ry)$  is 0.02 to 0.6 micrometer in view of Matsuyama in order to avoid large and uneven irregularities.

In claims 2, 6, note Matsuyama discloses the average ratio  $(Ra, x)/(Ra, y)$  is 0.6 or 0.8.

In claims 3, 8 and 11, Chiba et al. disclose the roughness surfaces are carried out by machining such as grinding and shot-peening (col. 3, lines 11-13).

Regarding claims 4, 7 and 10, Chiba et al. in view of Matsuyama disclose the claimed invention except for the ratio  $(Ra, x)/(Ra, y)$  is between 1.7 and 2.3. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the roughness of Chiba et al. in view of Matsuyama so that the ratio  $(Ra, x)/(Ra, y)$  is between 1.7 and 2.3, since it had been held that where the general conditions of the claim are disclose in the prior art, discovering the optimum ranges involves only routine skill in the art. *In re Aller*, 105 USPQ.


### **Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP (02, 30437); JP (59-205064), JP (62-30900), JP (2001-343056), JP (2002-213580), JP (2002-21956), JP (2002-70992), Takahara (6,068,564), Amonsens (2,892,354) and Amataka et al. (4,781,660) disclose a CVT having conical surface with surface roughness. Hashimoto (7,078,143) discloses a surface having a surface roughness.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Marcus Charles  
Primary Examiner  
Art Unit 3682  
September 02, 2006